

Abstract Submitted  
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**Superconducting phases of monolayer transition-metal dichalcogenides** EVAN SOSENKO, VIVEK AJI, Univ of California - Riverside — Layered group-VI dichalcogenides (e.g., MoS<sub>2</sub>) are two dimensional materials that engender novel coupled spin and valley physics. Characterized by strong spin-orbit coupling and inversion symmetry breaking, they give rise to novel phenomena such as the spin Hall effect and valley Hall effect. In this talk, we focus on the intrinsic and substrate induced superconducting phases expected in this new class of materials. Generically, two types are expected: (1) Cooper pairing with finite center-of-mass momentum, and (2) zero momentum pairs analogous to the conventional BCS phase. We establish the conditions for the realization of each type. Time permitting, we will discuss the nature of the quasiparticles resulting from valley-discriminating pair-breaking processes.

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